

*THE TIMEOUT RIBBON:  
A NONEXCLUSIONARY TIMEOUT PROCEDURE<sup>1</sup>*

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Recently, the use of timeout rooms has been questioned by various agencies, and some have adopted policies that prohibit or greatly restrict exclusionary timeout. The present study developed a timeout procedure that did not require removal of the misbehavior from the learning environment. The procedure was applied to the disruptive behaviors of five severely retarded children in an institutional special-education classroom. An observer prompted all teacher behaviors related to the procedures to assure their precise implementation. After baseline, a reinforcement-only condition was implemented. Each child was given a different colored ribbon to wear as a tie and received edibles and praise every few minutes for good behavior and for wearing the ribbon. When timeout was added, a child's ribbon was removed for any instance of misbehavior and teacher attention and participation in activities ceased for three minutes or until the misbehavior stopped. Reinforcement continued at other times for appropriate behavior. An ABCBC reversal design was used to demonstrate control of the behavior by the conditions applied. On average, the children misbehaved 42% and 32% of the time during the baseline and reinforcement conditions respectively but only 6% of the time during the timeout conditions. A followup probe during the new school year revealed that the teacher was able to conduct the procedure independently and that the children's disruptive behaviors were maintained at low levels. The practicality and acceptability of the procedure were supported further by the successful implementation of the procedure by a teacher in another state and by responses to a questionnaire given to 40 mental health professionals. The ribbon procedure appears to be a viable form of timeout, provided that disruptive behaviors during timeout can be tolerated within the setting, or a backup procedure such as exclusionary timeout is available when needed.

DESCRIPTORS: disruptive behavior, punishment, reinforcement, timeout, timeout ribbons, stimulus, social validation, followup measures, teacher attention, retarded children

A number of researchers have demonstrated the efficacy of timeout across a variety of populations: delinquents (Tyler and Brown, 1967);

retarded individuals (Clark, Rowbury, Baer, and Baer, 1973); autistic children (Wolf, Risley, and Mees, 1964); school children (Ramp, Ulrich, and Dulaney, 1971); emotionally disturbed children (Drabman and Spitalnik, 1973) and normal children in the home (O'Leary, O'Leary, and Becker, 1967). All of these studies involved excluding or isolating the misbehavior from the reinforcement area or activity.

Despite the impressive record of the timeout procedure in recent years, some school districts and institutions have chosen never to adopt, abolish, or greatly restrict its use for a variety of reasons. First, the recent concern over the use of techniques involving punishment or aversive control has made agencies wary of many punish-

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<sup>1</sup>The authors wish to thank Dr. James A. Brahlek, head of psychology, Rosewood Center, Owings Mills, Maryland for his assistance and support of this investigation and Betsy Smith, the teacher. Cindy Flake served as the primary reliability observer throughout all conditions. Rick Brown, Crystal Archable, and Gail Dubin served as observers during various conditions. Marsha Adler, Woodhaven Center, Philadelphia, Pennsylvania, was the teacher in the replication. We gratefully acknowledge the exceptional editorial efforts of Emily Herbert-Jackson and the excellent feedback we received from Reviewer B. Reprints may be obtained from R. M. Foxx, Department of Psychology, University of Maryland Baltimore County, 5401 Wilkens Avenue, Baltimore, Maryland 21228.

ment procedures. Second, unknowledgeable persons have occasionally labelled punitive procedures, such as extended periods of seclusion, timeout. Third, some institutional and educational settings do not have adequate facilities for instituting timeout. These organizations may hesitate to add a timeout area either because of public relations concerns or because of administrative policy. Fourth, the use of timeout by unknowledgeable persons has been ineffective on occasion, possibly because the "reinforcing" environment was by comparison identical to timeout in providing no activities, materials, or possibilities for interactions with staff. (The traditional institutional ward is a classic example of this situation.) Finally, timeout may be ineffective where it allows escape from a stressful or demanding learning situation (Foxx, 1976*a, b*).

Building on the work and suggestions of other investigators such as Glavin (1974), Husted, Hall, and Agin (1971), LeBlanc, Busby, and Thomson (1974), Porterfield, Herbert-Jackson, and Risley (1976), and Spitalnik and Drabman (1976), the present research sought to develop a nonexclusionary timeout procedure that would be effective, humane, and acceptable for use in most applied programs, thereby overcoming the above concerns. The procedure was applied in a special-education classroom.

The specific procedure was as follows: all students would be required to wear an object, in this case a ribbon, that could be established as discriminative for reinforcement. Whenever the student misbehaved, the ribbon would be removed for a specified period, and all forms of teacher-dispensed reinforcement and participation in activities would be discontinued. The student would remain in the classroom but in timeout. Access to reinforcement would become available only after the ribbon had been returned. Thus, the ribbon should acquire stimulus control properties.

This procedure would be expected to have certain advantages over a traditional timeout procedure. First, during timeout the student

would be viewing all of the reinforcers and activities enjoyed by other students. This might help later to motivate the student to refrain from misbehaving in order to remain in the activities and receive reinforcers or help to bridge the timeout duration for the lower functioning retarded who do not mediate time spans very well (Spitz, 1966). Second, timeout could be implemented more immediately than in the case where the misbehavior must be escorted to a room that might be located some distance away. The continuity of the group's activities should be interrupted less by removal of the ribbon than by removal of the misbehavior to another place. Third, if necessary, the misbehavior's inappropriate behaviors in timeout, such as self-abuse or stripping, could be stopped by the teacher in the early parts of the response chain because the teacher would be in the same room.

The procedure could also retain most of the advantages of using a timeout room. For example, removal and return of the ribbon would provide the misbehavior with a clear signal as to when timeout was in effect. The presence or absence of the ribbon would also provide informed visitors a clear signal as to when it was appropriate to interact with a child. The major reason we did not use the ribbon as discriminative for timeout by placing it on the student when the misbehavior occurred was that there would be no incentive for the student to wear it; thus, the stimulus value for students and visitors would be lost.

A possible major disadvantage of the timeout ribbon procedure is that disruptions continued in timeout could disturb the entire classroom, recruit peer attention, and possibly require teacher intervention. For example, the child might begin attacking other students, screaming, throwing or tearing teaching materials, or engaging in extreme forms of self-abuse. In such instances, a backup procedure such as isolation would be required to teach the child to sit quietly during timeout. As reported in other nonexclusionary timeout studies (LeBlanc *et al.*, 1974; Porterfield *et al.*, 1976) the backup procedure

would probably not be required very often, but provisions for it should be considered.

Finally, the success of the timeout ribbon procedure would depend, as it should, on first associating the ribbon with socially mediated reinforcers and activities. The highly visible ribbons would be expected to serve as discriminative stimuli for the teacher to reinforce appropriate behaviors.

The purpose of the present study was to assess the effectiveness of the timeout ribbon procedure in a classroom of disruptive retarded children, and to assess whether the procedure was practical and acceptable to professionals operating in the field.

## EXPERIMENTAL STUDY

### METHOD

#### *Subjects*

Five retarded boys in a cottage-based special-education class in a state institution served as subjects. Michael (8 yr) was severely retarded, with an assessed IQ of 27. He was hyperactive and spent much of his time running around the classroom yelling and throwing objects. Peter (18 yr) was profoundly retarded, with an assessed IQ of 12. During his waking hours he was required to wear a football helmet with a face mask because he often struck his face and head with his fists. Chuck (9 yr) was assessed as moderately to severely retarded (IQ of 24). He displayed a variety of acting-out behaviors such as yelling, banging objects or his hands on the table, and pinching others. Calvin (10 yr) was assessed as profoundly retarded. His misbehavior included yelling and out-of-seat behavior. David (9 yr) was assessed as severely retarded, with an MA of 22 months. David occasionally left his seat and on very rare occasions would tantrum, but in general behaved very well. David's low rate of inappropriate behavior made it possible for him to serve as an appropriate model for the other children. All of the children were non-verbal, except Chuck who was echolalic.

#### *Setting*

A room in the cottage was being used as a classroom. The room had several tables and chairs and lockers filled with toys and teaching materials. The children sat at one of the tables. The classroom environment was noisy, due to the high frequency and nature of the children's misbehavior. The teacher's attempts to discourage the children's disruptive behaviors with verbal reprimands were usually ineffective. The class had been meeting for seven months before the study. The teacher had not been systematically trained in behavioral principles, but was a receptive learner. The class met for approximately one and a half hours each weekday from 9 to 10:30 a.m. Usually, four to five activities were scheduled, each lasting between 15 and 25 min, depending on the day. The activities included supervised play at the table, training in body-parts identification, an activity designed to develop motor coordination, object identification training, and self-help skills training in an adjacent bathroom. The teacher occasionally praised the children for good behavior but used edible reinforcers only during the body-parts identification activity. (Approximately 10 edibles were given to each child; an approximate edible reinforcement rate of one per 9 min during the class).

#### *Experimental Design*

An ABCBC design was used. The sequence of conditions was baseline, reinforcement, timeout plus reinforcement, reinforcement, and timeout plus reinforcement. In addition, a one-day probe (return to reinforcement alone) was conducted during the final timeout condition. A one-day followup probe of timeout plus reinforcement was conducted the next school year.

#### *Procedure*

*Baseline* (seven days). During baseline, the teacher conducted the class in her usual fashion as described above.

*Reinforcement* (10 days). Because the effectiveness of timeout is dependent on the misbehavior being timed out from a reinforcing environment (Vukelich and Hake, 1971), positive reinforcement was scheduled for all of the classroom activities. Each child's behavior was reinforced with an edible and social reinforcement (praise, smiles, touches) approximately every 2.5 min provided that he was not displaying any target behaviors (described later) and was wearing his ribbon. For example, the teacher might say: "Good Michael, you are working quietly and wearing your ribbon". If a child was misbehaving at that time, the teacher told him to stop (as she had done during baseline) and then moved on to another child until the first child had stopped misbehaving, at which time she rewarded him. The junior author (who served also as the regular observer) verbally cued the teacher when and whom and which behavior to reinforce, e.g., "reinforce Michael for working quietly". (The rate of reinforcement was selected for its practical fit with the recording system.) The teacher was permitted to use social reinforcement at other times, as she had done during baseline. At the beginning of this condition and throughout the remainder of the study, each subject wore a colored ribbon, bolo tie fashion, around his neck during the class. (In some cases during the first few days of the condition, the ribbon was pinned to the back of the child's shirt until he ceased trying to remove it.) Each child's ribbon was a different color.

*Timeout plus reinforcement* (12 days). During this condition, the teacher continued to reward each child approximately every 2.5 min for good behavior and wearing his ribbon. When the child displayed a target misbehavior, the teacher was cued by the regular observer to remove the child's ribbon. The teacher removed the child's ribbon, placed it around her neck and told him that he had misbehaved (she named the specific behavior) and therefore could not wear his ribbon. Thus, removal of the ribbon signalled the onset of a 3-min timeout from positive reinforcement. Other observers (several

different university student volunteers) kept a record of the timeout period and verbally signalled to the teacher when to return the ribbon. If the child was misbehaving when the timeout period was due to end, it was extended briefly until the misbehavior had ceased. During timeout the child could view the classroom activities but was not permitted to participate. The teacher ignored the child and removed any objects near him. After the ribbon had been returned, several seconds were allowed to elapse and then the child was rewarded.

*Reinforcement* (three days). This condition was identical to the first reinforcement condition.

*Timeout plus reinforcement* (11 days). This condition was identical to the first timeout plus reinforcement condition. A one-day probe, return to the reinforcement alone condition, was conducted on the seventh day.

#### *Recording and Reliability*

Observers were present in the classroom for several days before formal data collection was begun. During this period, the children adapted to the observers' presence while the observers practised identifying and recording all disruptive behaviors that the teacher had designated as incompatible with learning. The target misbehaviors for each child were: Michael: out-of-seat, yelling, banging objects on the table, throwing objects, and hitting others; Peter: hitting his face with his hands, banging his arm, elbow, or leg against the table, crying and out-of-seat; Calvin: yelling and out-of-seat; Chuck: yelling, out-of-seat, and banging objects or his hands on the table; David: out-of-seat and yelling. A modified version of the observational system used by O'Leary and his colleagues to record disruptive classroom behavior was employed (O'Leary, Becker, Evans, and Saudargas, 1969; O'Leary, Kaufman, Kass, and Drabman, 1970). The five children were observed simultaneously during consecutive 30-sec intervals and the instances of misbehavior recorded. In each 30-sec interval, the first occurrence of each type of misbehavior was recorded for a child. For example, if Peter

hit his face during the observational interval, that behavior was recorded only once, regardless of the frequency of face hits during the interval. Each behavior was coded to facilitate the recording, but data were summarized for each child as the per cent of intervals in which any disruptive behavior occurred. Agreements on the occurrence of disruptive behaviors by interval averaged above 85% in each condition, including followup. Agreements on nonoccurrence averaged above 95%. Interobserver reliabilities were assessed from one to four times per condition. Occasional reliability checks by additional observers yielded values similar to those of the regular recorders.<sup>2</sup> The number of 30-sec intervals recorded per day averaged 110 (55 min) and varied from 70 to 140 (35 to 70 min of observation), depending on the day's activities. For example, some days the children were taken from the classroom to other activities. Recordings were not conducted outside the classroom.

The study was conducted three days a week through the first six days of the initial timeout ribbon procedure and every weekday thereafter when the observers' schedules became more flexible. The study began on March 16 and ended June 18, 1976.

The per cent of each child's disruptive behavior each day was computed by dividing the number of 30-sec intervals in which any instance of inappropriate behavior had occurred by the total number of observation intervals.

### *Followup*

The teacher reinstituted the program when the school year resumed in September. To assess her success, a one-day followup probe was conducted after she had been using the program for 19 days. The teacher conducted all portions of the program; the regular observer did not audibly cue her but recorded disruptive behaviors, the instances of the teacher rewarding the children with praise and edibles, and the number of

timeouts and their duration. A reliability recorder was also present to assess reliability.

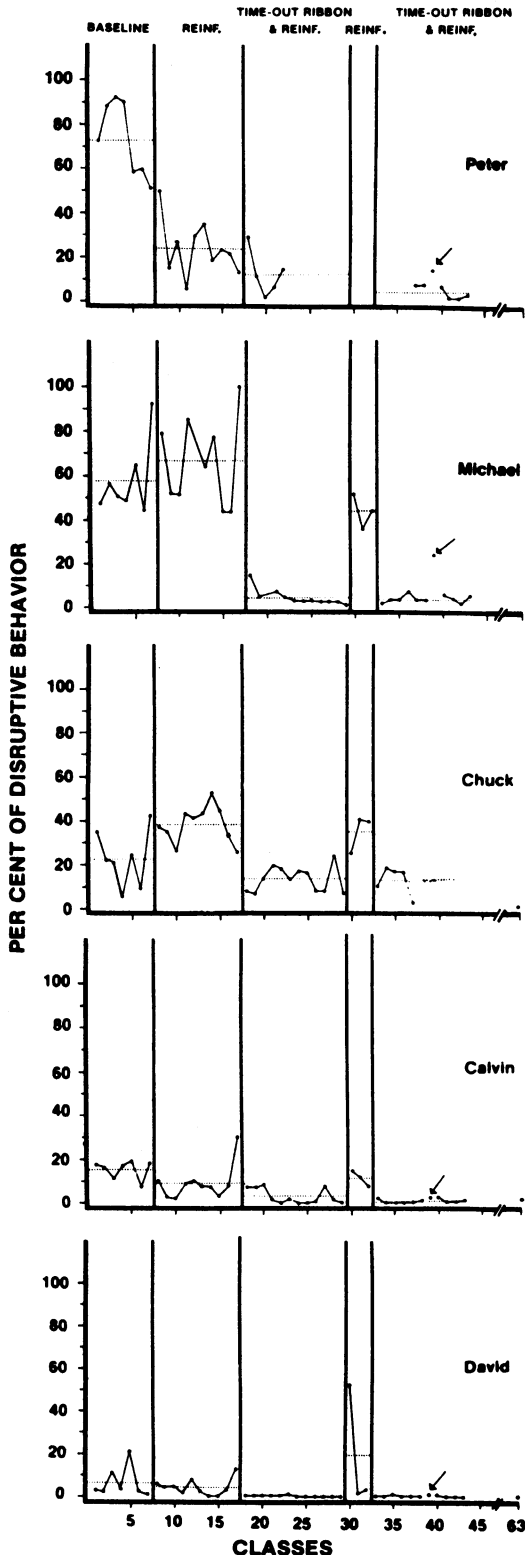
## RESULTS

### *Effects in the Classroom*

Figure 1 shows the individual graphs of each child's disruptive behavior during the various conditions.

Peter's misbehavior averaged 73% during baseline, decreased to 24% when reinforcement was added and decreased further to 12% during the first five days of the initial timeout condition. The next day, Peter was hospitalized with shigella (a highly communicable form of amoebic dysentery). Peter's misbehavior averaged 4% after he rejoined the class on the fifth day of the second timeout ribbon condition. A one-day reversal (Day 39) was instituted for all the children because Peter had missed the return to reinforcement condition and his misbehavior increased to 15% on that day. Michael misbehaved in 57% of the intervals during baseline, 67% and 43% during the two reinforcement conditions, 4% and 3% during the two timeout ribbon conditions, and 22% during the one-day probe (Day 39). Chuck's misbehavior averaged 23% during baseline, 38% and 35% during the two reinforcement conditions, and 14% and 13% in the two timeout ribbon conditions. Chuck missed the final six days of the study because he contracted shigella and was hospitalized. (The day after the study ended, the entire ward was quarantined in order to limit the number of children contracting shigella to only a few cases.) Calvin's misbehavior averaged 15% during baseline, 9% and 11% during the two reinforcement conditions, 3% and 1% in the two timeout conditions, and 2.5% during the one-day probe. David's misbehavior averaged 6% in baseline and 4% and 19% during the reinforcement conditions. One of David's rare tantrums (Day 31) accounted for most of the effect in the latter condition. In the timeout conditions, David's misbehavior averaged 4% (he misbehaved only once) and near zero respec-

<sup>2</sup>A complete description of the reliability results can be obtained by writing the authors.



tively. Because David behaved appropriately the majority of the time (usually over 95% of the intervals), he served as a positive model for the other children by receiving most of the reinforcers available to him for good behavior.

The per cent of classroom misbehavior is shown in Figure 2. David was excluded from this presentation because his baseline misbehavior never exceeded 10%. The four problem children misbehaved in 42% of the intervals during baseline, 34% and 30% during the two reinforcement conditions, 7% and 4% in the two timeout conditions, and 14% during the one day probe.

#### *Informal Observations of the Children's Reactions to Timeout*

On several occasions during the first few days of timeout, a timed-out child would attempt to remove another child's ribbon. When Michael found that he was not allowed to remove others' ribbons, he began lying on the floor beside his chair during his timeout. Peter would sometimes strike his football helmet with his hands (which was ignored) and sometimes cried. Calvin usually sat and observed the other children receiving reinforcement. Chuck engaged in the most disruptive behavior while he was in timeout. He would repeat phrases continuously, walk around and attempt to open cabinets, or attempt to lie on the table. The teacher had been instructed to ignore all of the children's misbehaviors as long as they did not interfere with the other students. Whenever a timed-out child did disrupt the class, such as Chuck lying on the table or Michael attempting to grab another child's ribbon, the teacher escorted him to his seat or moved him

Fig. 1. The effect of baseline, reinforcement, and the timeout ribbon procedures on the per cent of time spent in disruptive classroom behavior by each of five severely and profoundly retarded children. The horizontal broken lines indicate the mean for each condition. The arrows mark a one-day probe (Day 39) during which only reinforcement was in effect. The missing data points for Peter and Chuck occur where they were hospitalized with shigella. A followup observation of the program conducted by the teacher occurred on Day 63.



Table 1  
Questionnaire Responses (N = 40)

- (1) Would you use the Timeout Ribbon Procedure in your institution, classroom, *etc.*? (Per cent Responding)  
yes 44      maybe 41.4      no 14.6
- (2) How practical is the Timeout Ribbon Procedure for your setting? (Per cent Responding)  
very useful 10      quite useful 20      of some use 47.5      of little use 10      not practical at all 12.5
- (3) Assuming that a timeout room and the Timeout Ribbon are of equal effectiveness in decreasing undesirable behaviors, which one would you prefer to use? (Per cent Responding)  
Timeout Ribbon 90      Timeout room 10
- (4) If you are not allowed to use a timeout room in your setting because of either practical or ethical concerns, do you think you would be allowed to use the Timeout Ribbon Procedure? (Per cent Responding)  
yes 95      no 5
- (5) Which program would you rather explain to parents, administrators or visitors? (Per cent Responding)  
Timeout Ribbon 84      Timeout room 16
- (6) List all behavioral methods of decreasing behavior which you feel are more severe or restrictive than the Timeout Ribbon Procedure

Procedure <sup>a</sup>	Number of Respondents Listing the Procedure
1. Traditional timeout/timeout in corners	28
2. Physical restraint	18
3. Aversive stimulation (including shock)	14
4. Overcorrection	9
5. Contingent exclusion	8
6. Response Cost	7

<sup>a</sup>The respondents were not asked to define the procedures they listed. Thus, it is possible that two terms may describe the same procedure *e.g.*, contingent exclusion and timeout.

tween the ribbon and the availability or absence of reinforcement. Initially, children in timeout attempted to remove other children's ribbons or to grab their own ribbon as it hung from the teacher's neck. The stimulus control of the ribbon was evidenced also in other ways. During the timeout conditions, the children were noisy and unruly when they entered the classroom each morning. As soon as the ribbons were placed around their necks, however, there was an immediate and dramatic decrease in disruptive behavior. As might be expected, the children became noisy and unruly as soon as the ribbons were removed at the end of class.

#### A SURVEY OF ACCEPTABILITY AND PRACTICALITY OF THE PROCEDURE

To assess the acceptability and practicality of the timeout ribbon procedure, a questionnaire was given to 40 individuals in several different states who worked with retarded, emotionally disturbed, and learning-disabled persons. (The

authors asked an acquaintance at each facility to distribute the questionnaires and collect them when they were completed.) The respondents included special-education teachers, students, and aides, a principal, staff trainers, the chairman of a human rights committee, institutional unit leaders and staff, graduate students in psychology and special education, program directors, and doctoral-level behavior modifiers.

The respondents read a two-page summary of the timeout ribbon procedure and answered five questions designed to assess its acceptability and practicality. They were asked also to list all procedures that they considered to be more severe or restrictive than the ribbon procedure. (It should be noted that this form of questionnaire may have solicited favorable reactions to the ribbon procedure as compared to the other procedures. For example, the respondents could have been influenced by the way the questions were phrased or the fact that although the authors did not know most of the respondents, the respondents were obviously well aware of the



authors' interest in the timeout ribbon procedure.)

Table 1 shows the questionnaire results. Eighty-five per cent of the respondents indicated that they would consider using the timeout ribbon procedure. Seventy-seven per cent indicated that the procedure appeared to be of some practical use for their setting. Ninety per cent indicated that they would prefer to use the procedure instead of a timeout room if both procedures were equally effective. Ninety-five per cent felt that they would be allowed to use the procedure in their setting even if exclusionary timeout had been banned because of ethical or practical concerns. Eighty-four per cent indicated that they would prefer to explain the timeout ribbon procedure rather than exclusionary timeout to parents, administrators or visitors. Six behavioral procedures were listed by five or more respondents as being more severe or restrictive than the timeout ribbon procedure.

#### AN INDICATION OF THE PRACTICALITY OF THE PROCEDURE

Despite the results of the present investigation and the questionnaire data, the question remained whether someone could implement the timeout ribbon procedure using only a written description. To answer this question, a two-page procedural description was sent to a special-education teacher at an institution in another state. The teacher was well trained in behavioral principles. Her class contained eight adolescent boys classified as "trainable". All were labelled as severely or moderately retarded and several were labelled also as emotionally disturbed. The teacher had successfully eliminated the inappropriate behaviors of five boys with token fines and contingent observation. Three boys, however, continued to behave inappropriately.

The classroom environment was reinforcing; the boys received tokens, edibles, and praise for academic activities and appropriate behavior. The teacher and her aide worked with the boys individually and in groups.

All eight boys were given a colored ribbon at the beginning of an 11-day baseline period, although the teacher and her aide kept records only for the three boys who were behaving inappropriately. Records were kept only during a 1-hr period each day, although the timeout ribbon procedure was in effect all day.

The three target boys were Jerry, IQ 55; Jimmy, IQ 53; and Hal, IQ 28. The target behaviors the teacher selected were: silly nonsensical speech for Jerry, ignoring instructions for Jimmy *i.e.*, inattentiveness, and emitting inappropriate noises for Hal. The teacher recorded each instance of the target behaviors during the 1-hr period and graphed them daily. Each week, she mailed an updated copy of the graph to us.

During baseline, the teacher and aide taught the class and reinforced appropriate behaviors as they had always done. The only change was that whenever a boy received a token, edible, or praise for academic work or good behavior, he was told also that the reinforcer was for wearing his ribbon. Following the baseline, the timeout ribbon procedure was implemented for 80 days. The ribbon was removed for 2 min whenever a target misbehavior occurred.

The ribbon procedure decreased the inappropriate behavior of all three boys. Jerry's inappropriate speech decreased after 10 days from a mean baseline level of 10 per hour to about one per hour, where it remained. Jimmy's failure to follow instructions decreased from a baseline level of about three per hour to near zero after three days. Hal's inappropriate noises decreased from a baseline level of over seven per hour to near zero within seven days. The teacher felt that the hour time sample of the boys' behavior was an adequate reflection of their behavior during the entire school day. The experimenters observed the class on several occasions before and during the intervention, and found the teacher's reports of the success of the procedure to be accurate, although no reliability data were collected because of practical considerations. However, the classroom aide and several other teachers in the school confirmed the effect.

The teacher reported that on one occasion as his ribbon was being removed Jerry said: "Don't take away my ribbon, I'll be good." and that the procedure was used effectively outside the classroom, for example, during an afternoon movie.

### GENERAL DISCUSSION

Several factors appeared to have been responsible for the success of the timeout ribbon procedure and could be examined experimentally. First, the direct scheduling of reinforcement and raising the density of reinforcement ensured that the classroom situation would be pleasant and that the timeout period would be aversive. Second, timing out the children within the classroom permitted them to sample the reinforcers they were missing. Although not yet empirically validated, timeout combined with reinforcer sampling may be more aversive than exclusionary timeout, provided that "bootleg" peer attention is not a problem. Third, wearing the ribbon was established as a requirement for reinforcement. Removal of the ribbon provided the child with a clear signal that timeout was in effect. Also, the presence or absence of the ribbon served to alert informed visitors as to whether or not to interact with a child. This may be an important function of the ribbon procedure, since uninformed visitors can greatly reduce the effectiveness of a child's program by inadvertently attending when timeout is in effect. By placing a large sign on the outside of the classroom door that explains the purpose of the ribbon procedure, teachers would not have to intercept visitors to explain which children are allowed a social interaction. Fourth, the ribbon could be removed almost immediately following the misbehavior, thereby aiding the child in learning the relation between misbehavior and the aversive consequence that followed. Fifth, the timed-out child had the opportunity to observe the appropriate behavior of other children receiving reinforcement, as is also the case with contingent observation (Porterfield *et al.*, 1976). Sixth, there was also the possibility that the ongoing class-

room activities somehow competed with the inappropriate behaviors that the child would normally display in timeout and that one would expect to disrupt the class. Seventh, the presence of the ribbon may have prompted the teacher to deliver a higher rate of attention for appropriate behaviors than would have otherwise been the case. The teacher in the demonstration project reported that what she liked most about the ribbon was that it served as a constant reminder to her and the aide to reinforce the boys' behavior.

The present program had one major advantage over traditional timeout procedures: no special room was required. As a result, the timeout ribbon procedure could be used across all situations and activities, since the timeout consequences would always be available. It should be noted, however, that a timeout room should be available as a backup procedure should the timeout ribbon procedure prove unsuccessful. No doubt, there are some individuals who could not be timed out within a classroom or activity because they would become assaultive, destructive of property, or extremely disruptive in general. To some extent, we employed certain measures to minimize that possibility. For example, all teaching materials were kept in locked cabinets unless they were being used in the current activity. Objects on the walls were either firmly attached, indestructible, or expendable. The children in the present study were not assaultive toward adults and were small enough for the teacher to control physically. However, none of the older and larger boys in the replication aggressed toward their teacher when their ribbons were removed. In these applications, the removal of the ribbon seemed to produce a general suppression of behavior during the timeout period. Undoubtedly there will be individuals for whom the present program is not appropriate. The only sure way of identifying those individuals, of course, is to implement the program.

In classrooms for higher functioning retarded students or normal students, the cooperation of the subject's classmates may be necessary to ensure that they do not give attention during time-

out, because the teacher's withdrawal of attention would probably not be sufficient to overcome peer attention.

The ribbon could be combined with other nonexclusionary procedures such as contingent observation. The ribbon first would be established as discriminative for reinforcement and then removed when the child was required to sit and observe for a period of time following misbehavior. The ribbon would be returned when the child was returned to the reinforcing environment. Thus, the removal of the ribbon would signal that contingent observation was in effect. Also, a child who left the sidelines during contingent observation could be identified quickly by the absence of a ribbon.

The procedure appears to be practical and acceptable for several reasons. First, the followup revealed that the teacher was able to conduct the procedure by herself and that she continued using it when school reconvened. Second, the replication revealed that a teacher trained in behavioral principles was able to use the program with only a two-page summary of the procedure as a guide. She reported that the ward staff where the boys lived were considering implementing the procedure in that setting. Such demonstrations will help answer more completely just how practical the procedure is. Finally, the questionnaire results indicated that mental-health personnel and teachers regarded the procedure as humane, potentially useful, and less restrictive or intrusive than several other behavioral methods of controlling inappropriate behavior.

There is no reason why less obtrusive objects could not be substituted for the necktie ribbon. After the study, we became concerned that requiring retarded persons to wear a ribbon around their necks might be counter productive to the "spirit of normalization". Accordingly, in further applications of the ribbon procedure, we have discarded the necktie ribbons and have substituted attractive ribbon wrist bands that have Velcro tape on each end, permitting them to be removed easily and quickly. Hopefully, as the children's behavior improves, the ribbon proce-

dure can be ultimately faded out so that occasional withdrawals of teacher or staff attention and restriction from activities would be effective forms of timeout.

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Received 25 August 1976.

(Final Acceptance 20 June 1977.)